Counting Carbohydrates for the Blind

An Online Instructional Design Study

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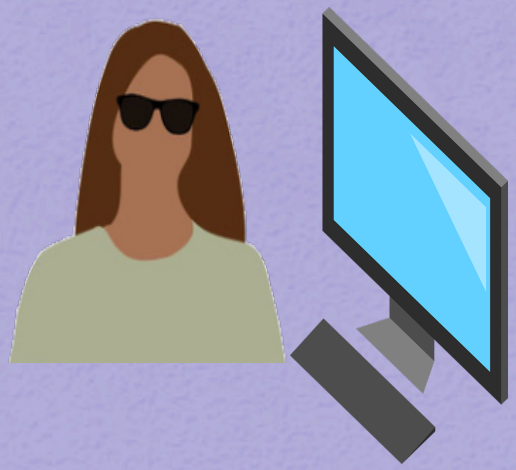
Learning Design & Technology

Agenda

- Rationale for Topic
- Project Development
- Results and Findings
- Conclusion

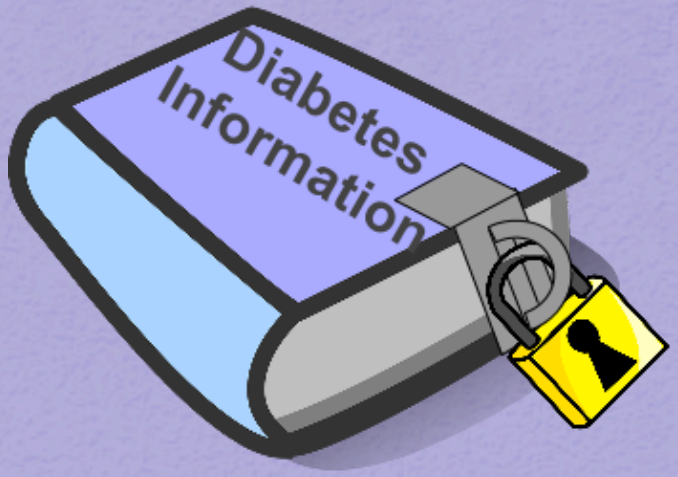
Rationale for Topic:

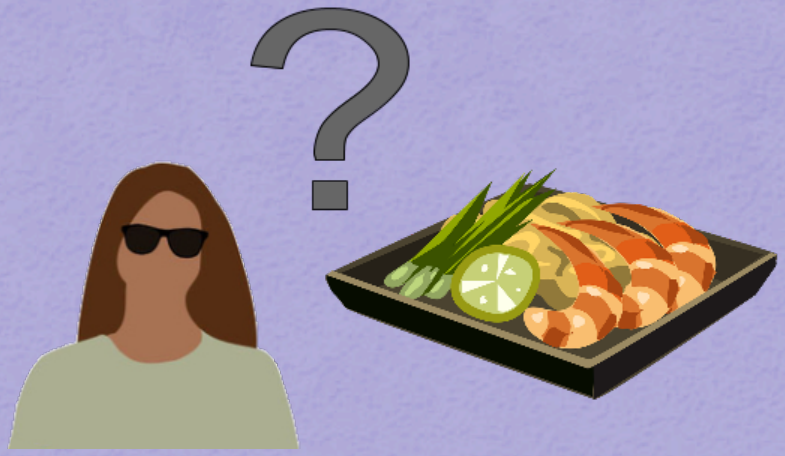
From personal experience



Inaccessible or Irrelevant Information

Estimate portion size





Rationale for Topic

Seeking Information

Review of Literature

- *Face-to-face not necessarily accessible (Williams, 2009)*
- *Alternative: Web-based approach for targeted audience (Pal, et al., 2014)*

Project Defined

Design and evaluate:

- An accessible web-based module to teach blind adults with or at risk of developing Type 2 Diabetes how to count carbohydrates to help manage or prevent the development of Diabetes.

My research questions include:

- How appropriate and sufficient Is the content presented to this specific audience?
- How effective are the methods of delivery and instruction?

Content Development

Diabetes Self Management = Too Broad

Counting Carbohydrates = Focused

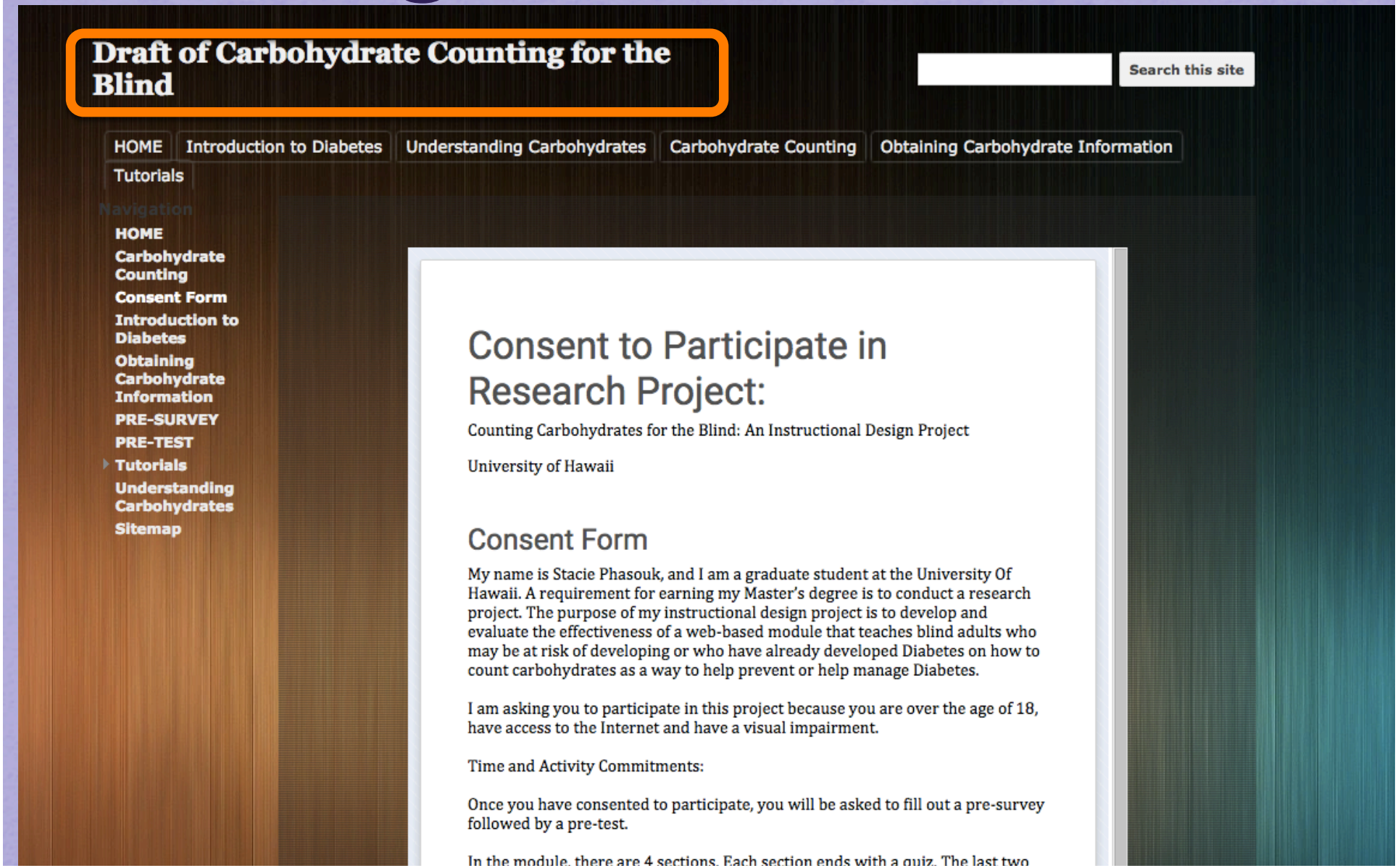
Possible Web Tools

Poll Question

Do you know how a screen reader moves through a webpage?

Using a Screen Reader

Using a Screen Reader

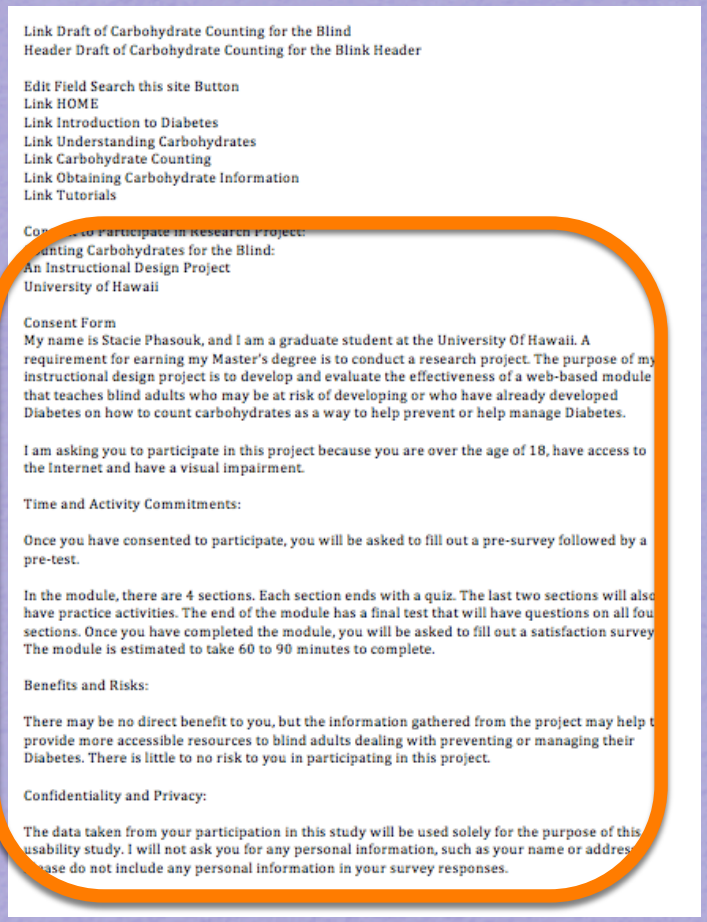


Using a Screen Reader

Using a Screen Reader

Screen Reader "View"

Consent Form inside iFrame



Link Draft of Carbohydrate Counting for the Blind
Header Draft of Carbohydrate Counting for the Blink Header

Edit Field Search this site Button
Link HOME
Link Introduction to Diabetes
Link Understanding Carbohydrates
Link Carbohydrate Counting
Link Obtaining Carbohydrate Information
Link Tutorials

Co... ...to Participate in Research Project:
...unting Carbohydrates for the Blind:
An Instructional Design Project
University of Hawaii

Consent Form
My name is Stacie Phasouk, and I am a graduate student at the University Of Hawaii. A requirement for earning my Master's degree is to conduct a research project. The purpose of my instructional design project is to develop and evaluate the effectiveness of a web-based module that teaches blind adults who may be at risk of developing or who have already developed Diabetes on how to count carbohydrates as a way to help prevent or help manage Diabetes.

I am asking you to participate in this project because you are over the age of 18, have access to the Internet and have a visual impairment.

Time and Activity Commitments:

Once you have consented to participate, you will be asked to fill out a pre-survey followed by a pre-test.

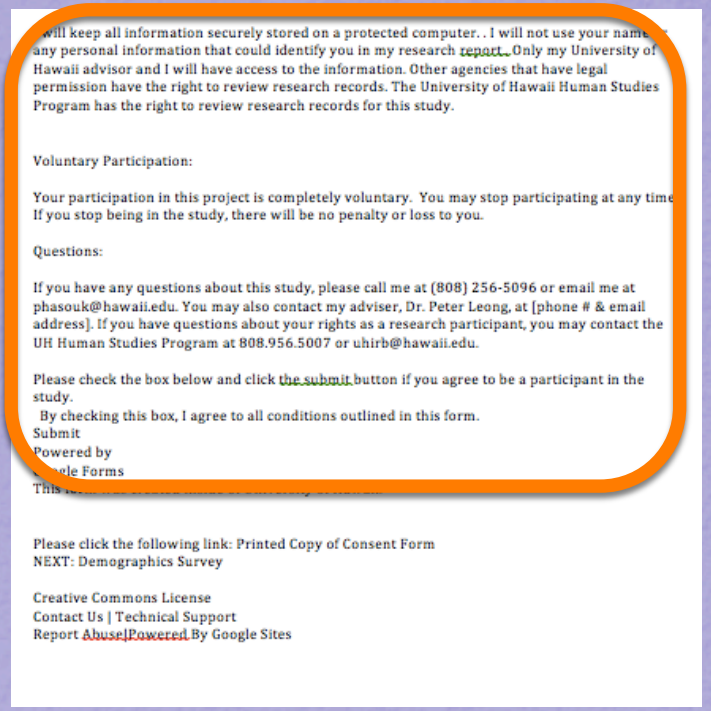
In the module, there are 4 sections. Each section ends with a quiz. The last two sections will also have practice activities. The end of the module has a final test that will have questions on all four sections. Once you have completed the module, you will be asked to fill out a satisfaction survey. The module is estimated to take 60 to 90 minutes to complete.

Benefits and Risks:

There may be no direct benefit to you, but the information gathered from the project may help to provide more accessible resources to blind adults dealing with preventing or managing their Diabetes. There is little to no risk to you in participating in this project.

Confidentiality and Privacy:

The data taken from your participation in this study will be used solely for the purpose of this usability study. I will not ask you for any personal information, such as your name or address... ...ase do not include any personal information in your survey responses.



...will keep all information securely stored on a protected computer. . I will not use your name or any personal information that could identify you in my research report. Only my University of Hawaii advisor and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawaii Human Studies Program has the right to review research records for this study.

Voluntary Participation:

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Questions:

If you have any questions about this study, please call me at (808) 256-5096 or email me at phasouk@hawaii.edu. You may also contact my adviser, Dr. Peter Leong, at [phone # & email address]. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

Please check the box below and click the submit button if you agree to be a participant in the study.
By checking this box, I agree to all conditions outlined in this form.
Submit
Powered by
...ogle Forms
This ...

Please click the following link: Printed Copy of Consent Form
NEXT: Demographics Survey

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Testing Accessibility

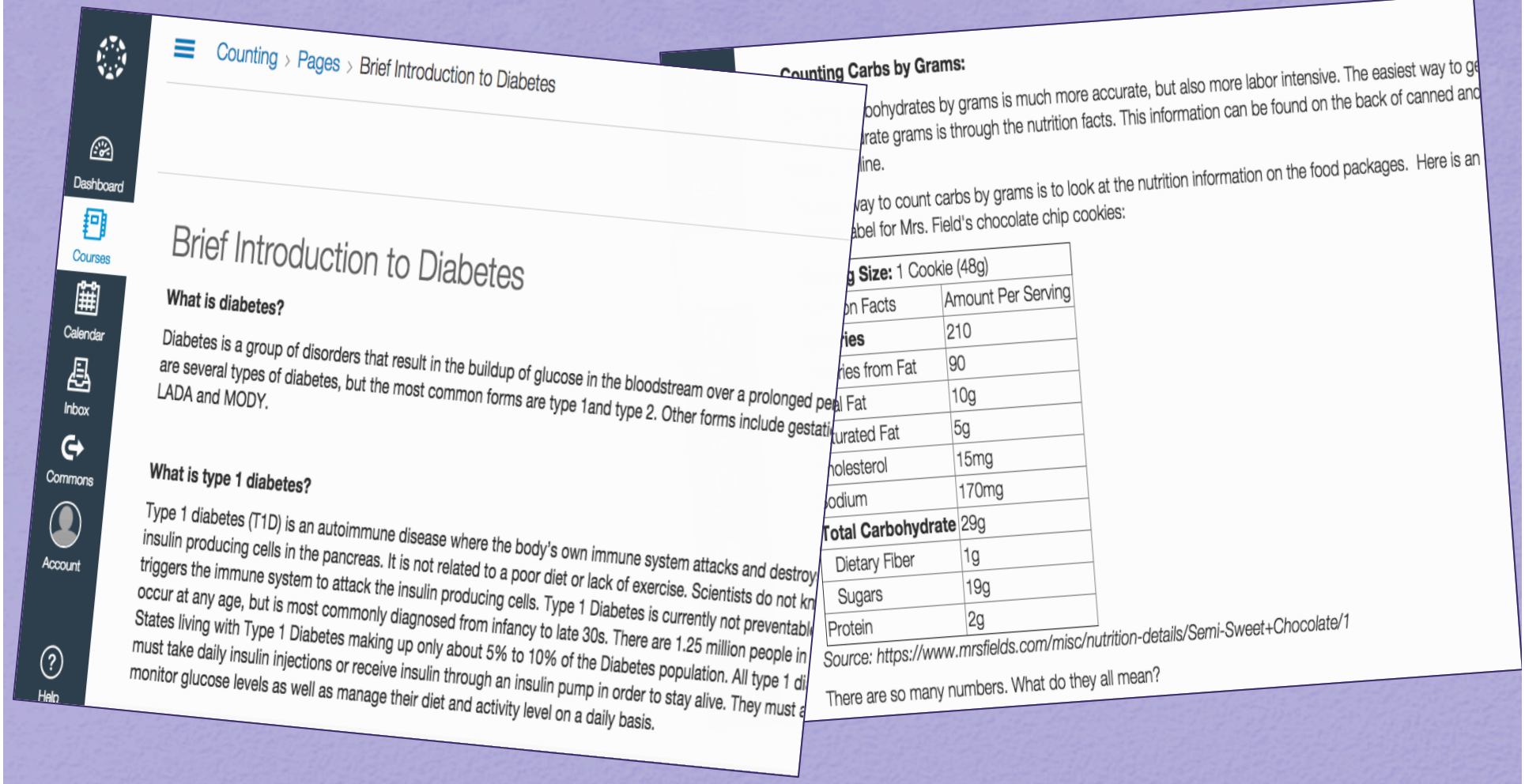
Accessible Platform

to the rescue!

- *Navigable*
- *Accessible Interactivity*

Project Development

The Module

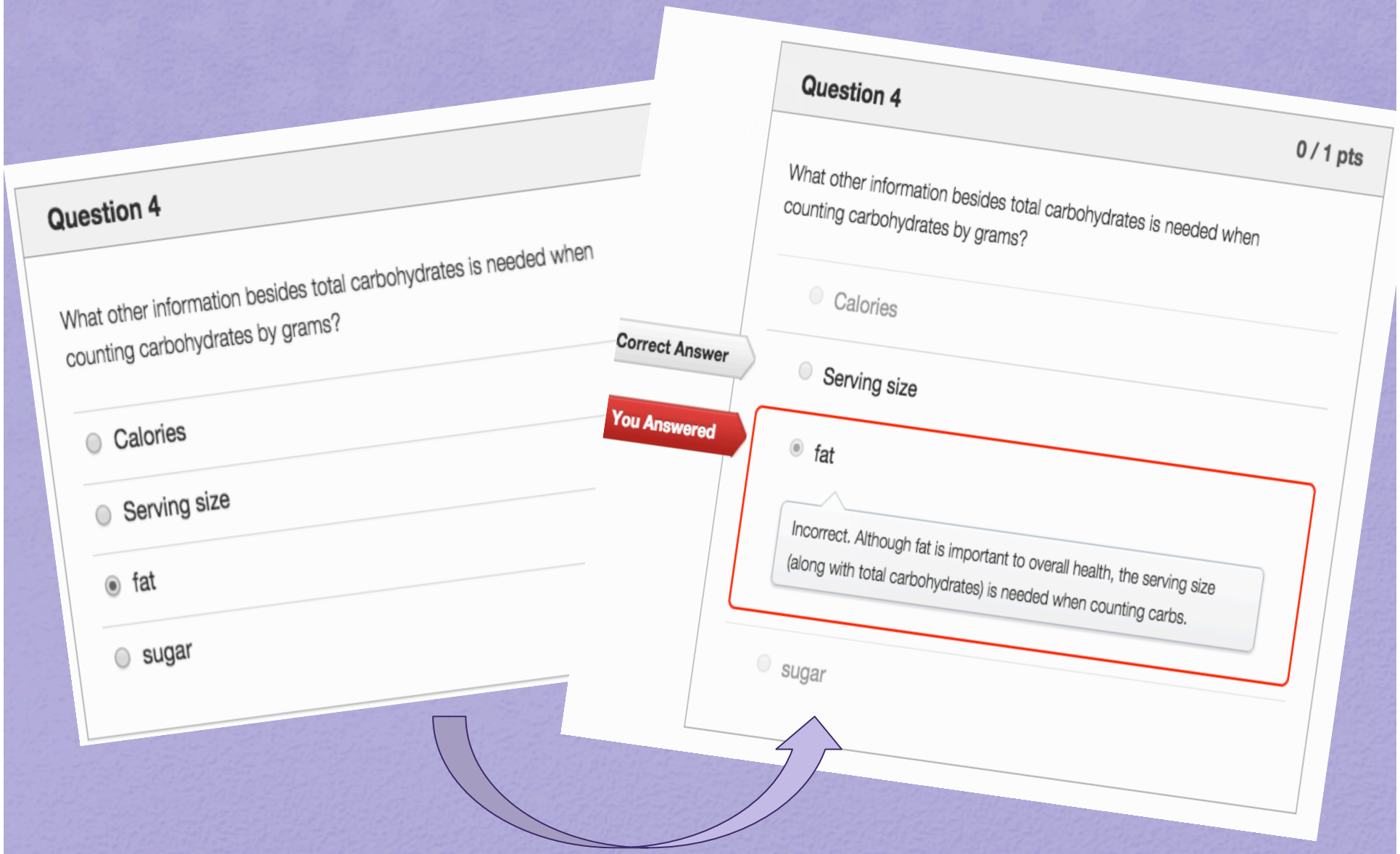


Module Sections

1. Brief Introduction to Diabetes
2. Understanding Carbohydrates
3. Basic Carbohydrate Counting
4. Tools & Techniques for Carbohydrate Counting

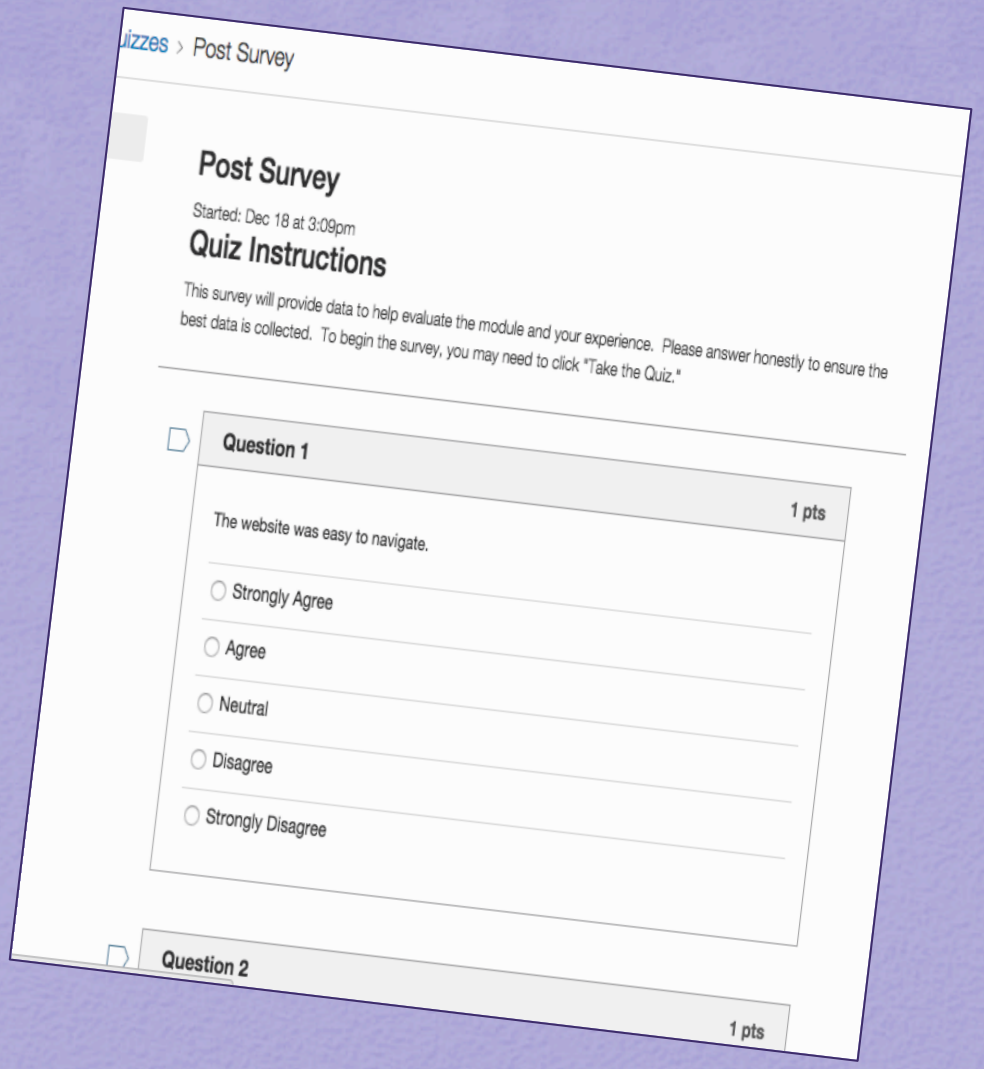
Project Development

Quizzes for Feedback



Data Collection Tools

- Demographic Survey
- Pre and Post Tests
- End of Module Survey



Pre & Post Test Content

- Questions about Diabetes
- Questions about Carbohydrates
- Questions about Counting Carbohydrates

Pre & Post Test Questions

Pre

Milk contains carbohydrates.

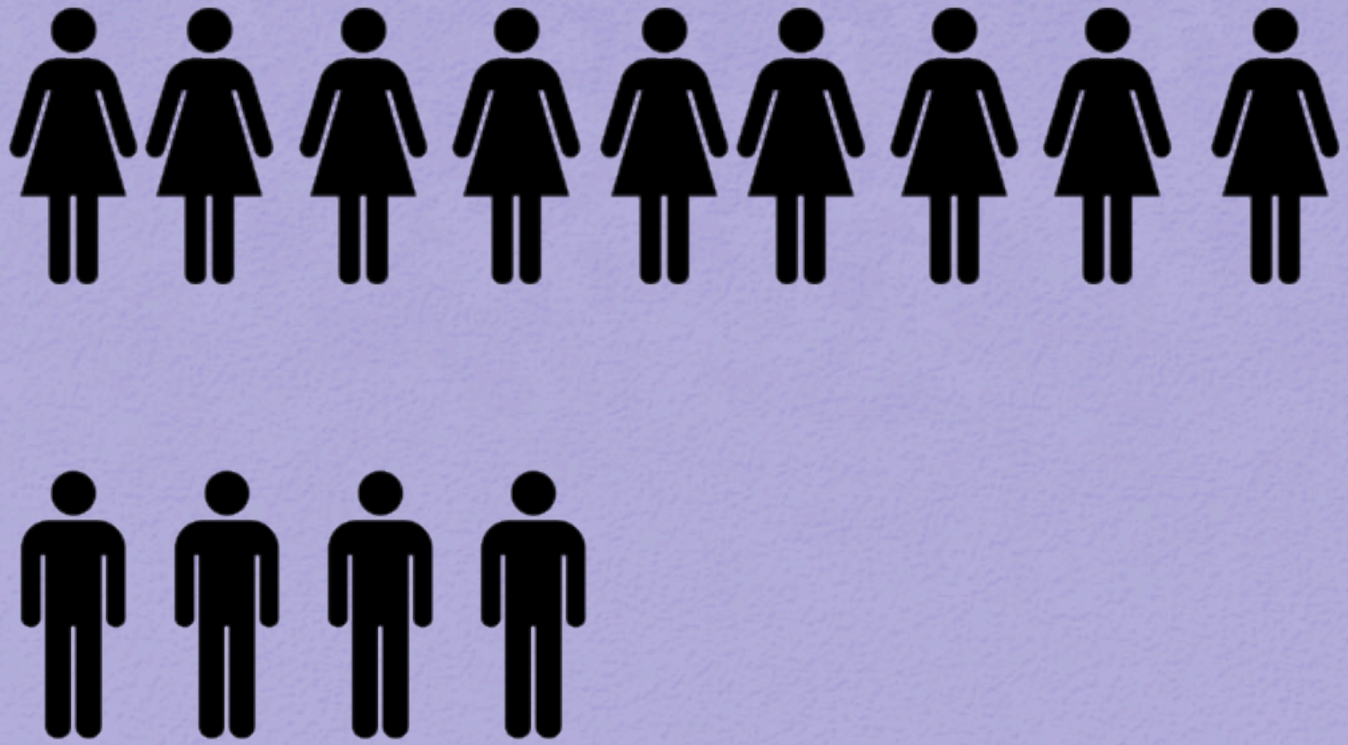
- ○ True
- ○ False
- ○ I don't know

Post

What in the list below "DOES NOT" contain carbohydrates?

- ○ Milk
- ○ Butter
- ○ Yogurt
- ○ Ice cream

Interested Participants



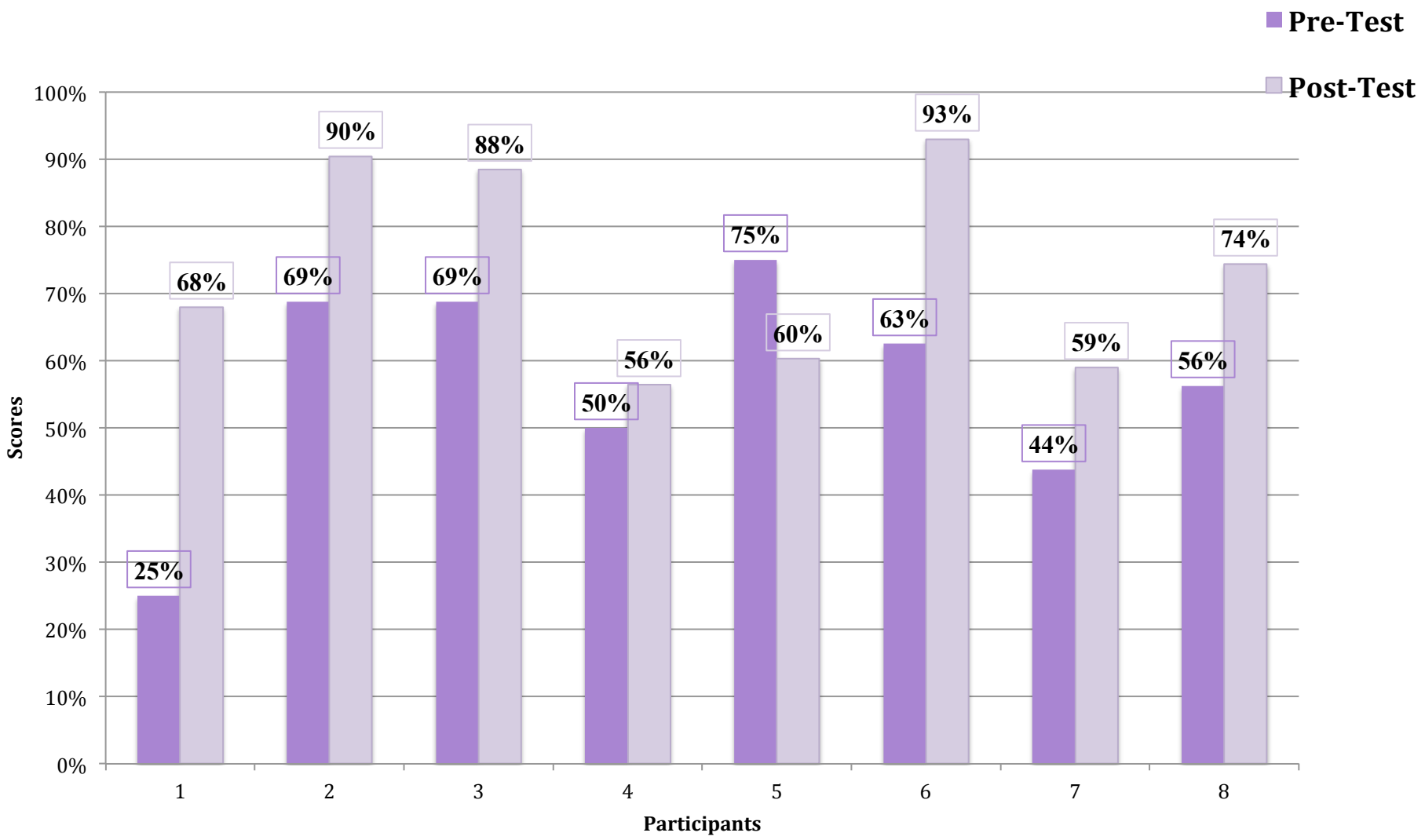
Actual Participants

Demographics

Demographics		Technology Utilized		Perception of Technology Skill			
Sex		Primary Browser Used			Beginner	Intermediate	Advanced
Male	0	Internet Explorer	5	Internet proficiency	1	3	4
Female	8	Safari	2				
Age		Firefox	0	Screen reader proficiency	1	3	4
25 and under	1	Chrome	1				
26-35	2	Other	0				
36-45	0	Use a Screen Reader					
46-60	2	Yes	8				
61-74	3	No	0				
75 and above	0						
Education Background							
High school	1						
AA	2						
BA	3						
MA	1						
Ph.D.	1						

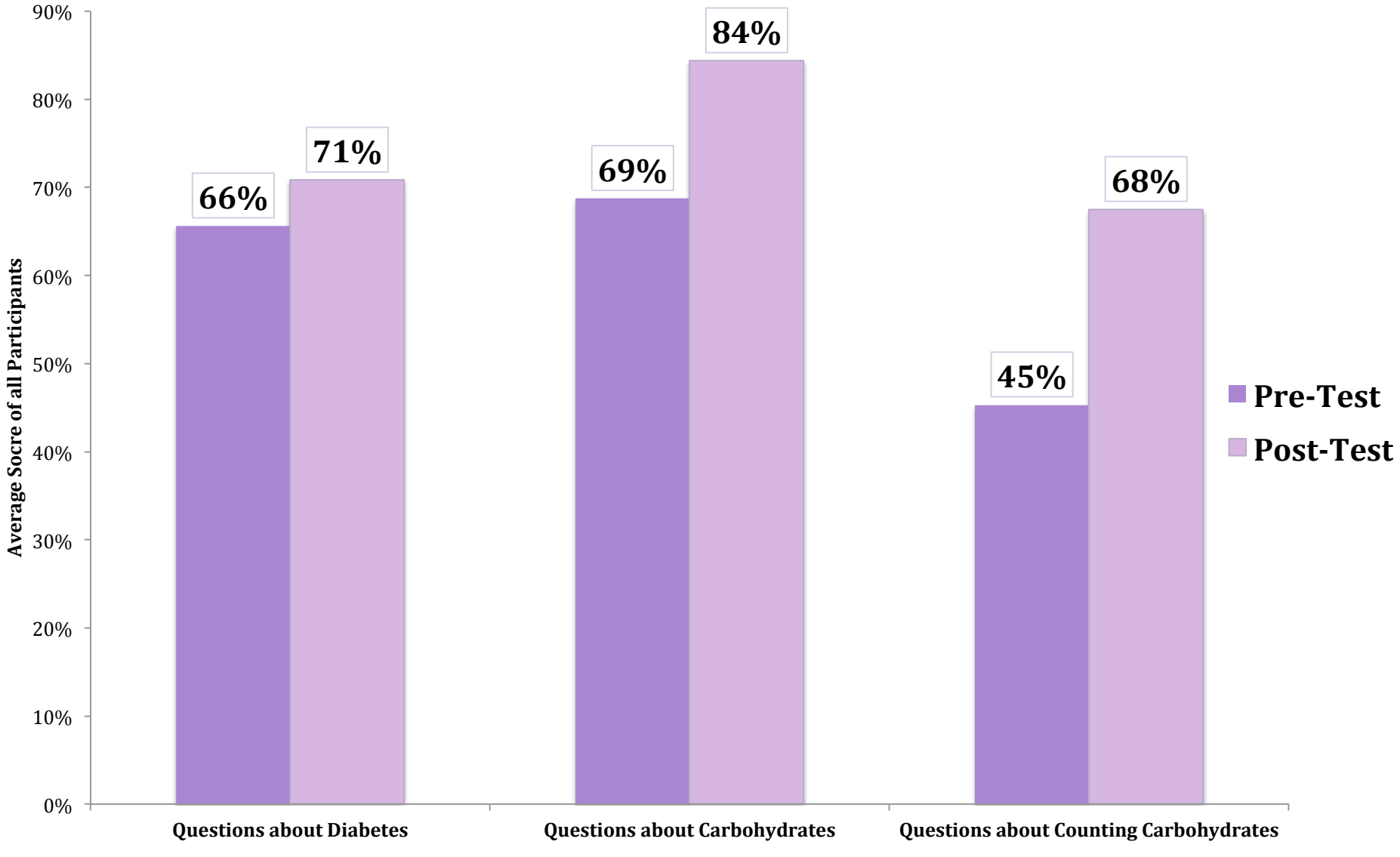
Results

Pre/Post Test Comparison



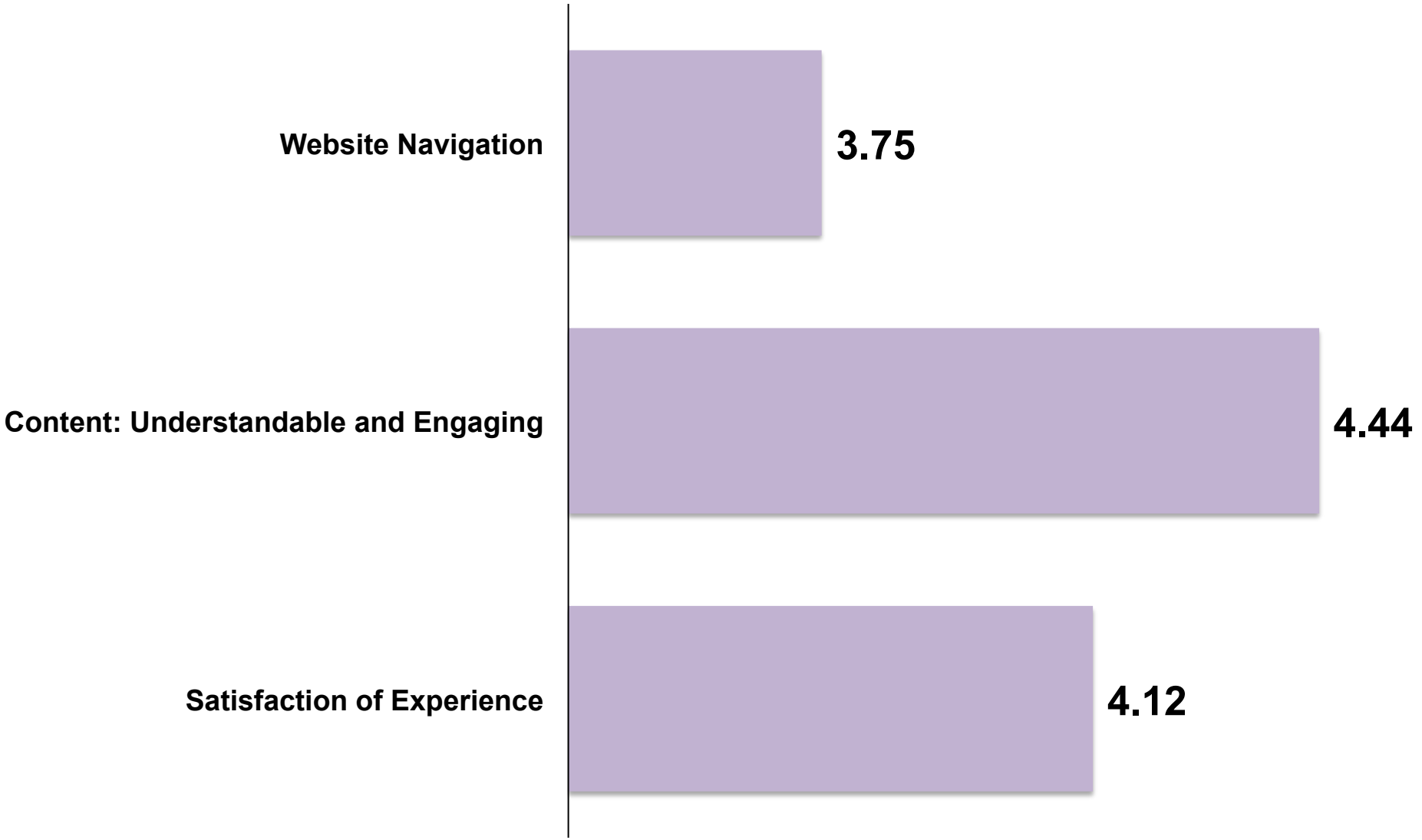
Results

Content Analysis



Results

Post Survey



Feedback: Positive

"I enjoyed the content…"

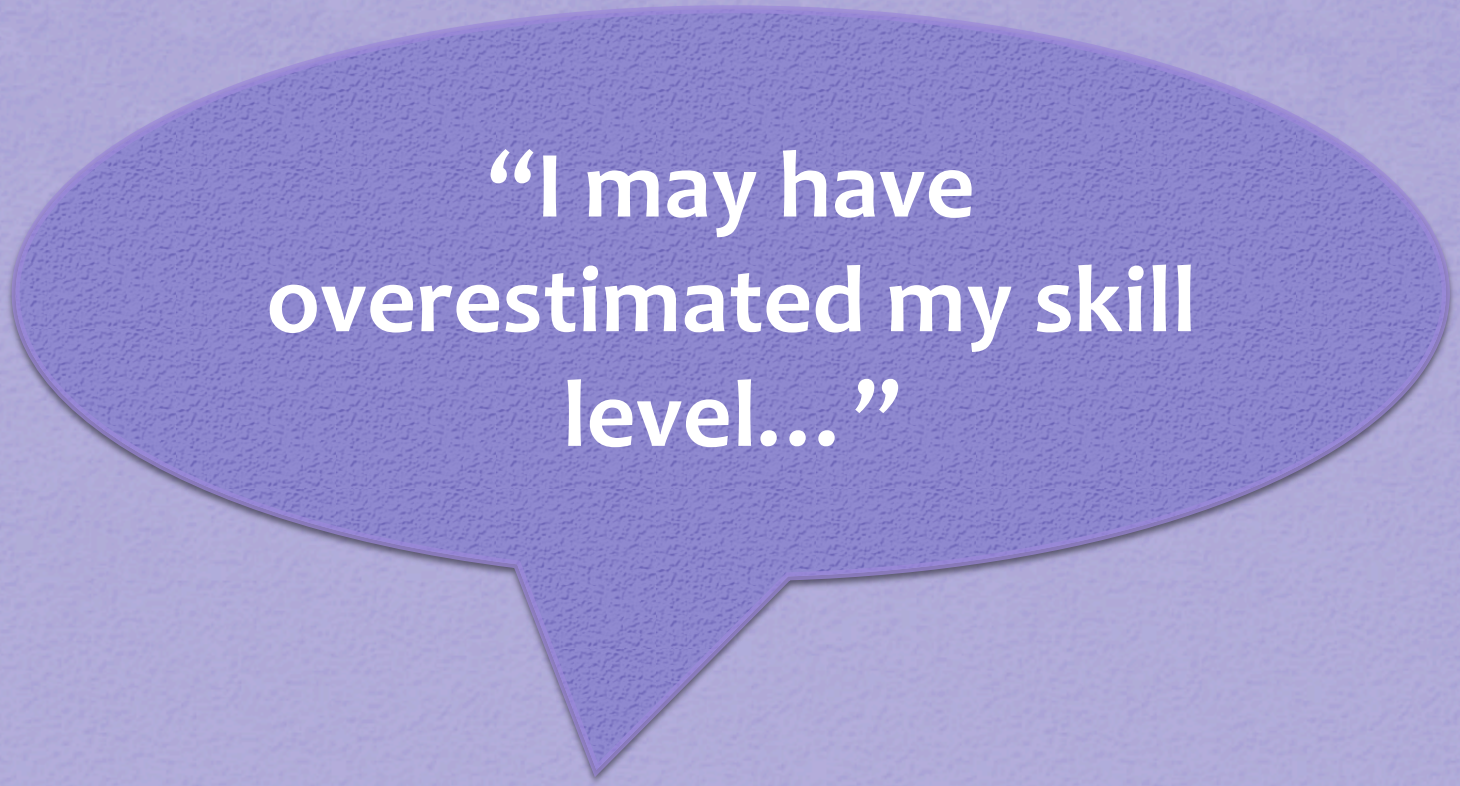
"Illuminated how blind people can monitor their sugar with minimal help."

Feedback: Negative

"… the cursor would jump…"

"I needed to refind where I left off after answering each question…"

Navigation or Skill?



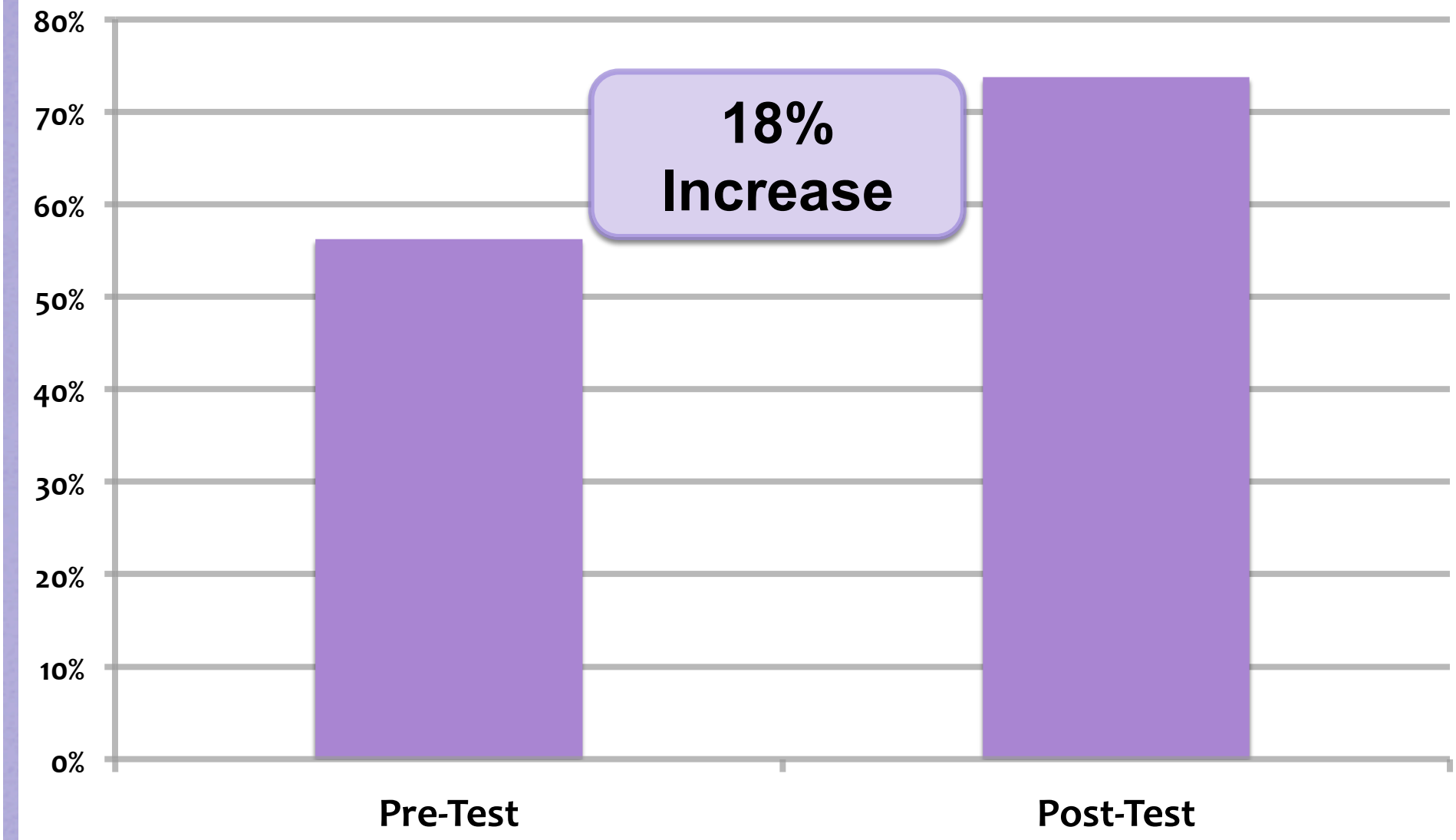
Participant 6

“Intermediate user of Screen Reader and Internet”

Feedback: Improvement

Conclusion

Successful Learning



Conclusion

Purpose and goals were met:

- *Increased knowledge of how to count carbohydrates*
- *Content was valuable to the specific audience*

Acknowledgements

- *Family*
- *Cohort and Critical Friends*
- *Professors and Instructors*

Questions